



At Eastern Connecticut  
State University

**Written Testimony of William Leahy  
Institute for Sustainable Energy at Eastern Connecticut State University  
Before the  
Energy and Technology Committee  
Thursday, March 7, 2013  
Bill 6360**

Good morning, Senator Duff, Representative Reed, Senator LeBeau, Representative Steinberg and distinguished members of the Energy and Technology Committee. My name is William Leahy and I am the Director and Chief Operating Officer for the Institute for Sustainable Energy (ISE) at Eastern Connecticut State University (ECSU). My testimony is in support of a number of subsections of the Governor's Bill; [H.B. No. 6360](#) - **AN ACT CONCERNING THE IMPLEMENTATION OF CONNECTICUT'S COMPREHENSIVE ENERGY STRATEGY.**

First, I would like to take this opportunity to thank you all for your concerns over the current economic climate in our state and specifically your focus on the impact of high energy costs, and its effect on Connecticut's public sector, including; municipalities, K12 schools, and our state agencies, colleges and universities. I appreciate your continued support of the Connecticut Energy Efficiency Fund, and the Connecticut Clean Energy Finance and Investment Authority and your interest in solutions offered in the Comprehensive Energy Plan (CEP).

I have spent over 33 year in the fields of energy efficiency, load management and sustainability. For the last eleven years I have served as Director of ISE, supporting implementation of Connecticut's energy public policy and helping raise efficiency in public sector buildings, including; school, municipal buildings and state government facilities. You may be aware that over the past ten years, ISE has benchmarked over 150 state buildings and hundreds of municipal facilities, including over 400 public schools using US EPA's Energy Star Portfolio Manager. As a result, I feel particularly well qualified to comment on those provisions of the Comprehensive Energy Plan that supports providing facility managers with more accurate energy information, technical training and project financing options. This strategy will provide facility managers with information on the current efficiency of the buildings under their control, helping them direct their efforts to reducing the erosion of funds provided from taxpayer and student tuition resulting from the high energy use of inefficient state and municipal buildings. Without benchmarking, many of these facility managers never know how much energy their buildings consume. I fully support initiatives that assist municipalities and state agencies, including our colleges and universities, with support for identifying and assessing opportunities to reduce energy use and stabilize operating costs. I also support the use of a variety of financing mechanisms for implementing efficiency and renewable energy projects, some of which provide return-on-investments far in excess of project costs and more attractive than traditional investments. Energy efficiency provides a cost effective strategy for lowering the cost of government.

## These are my Specific Recommendations:

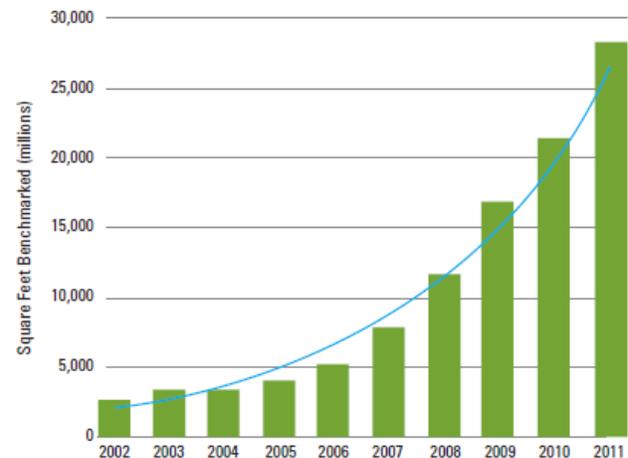
### *Section 10 (a) 1 “...adopts US EPA Energy Star Portfolio Manager benchmarking software...”*

I strongly recommend that EPA’s Energy Star Portfolio Manager is selected as the most appropriate standard for assessing and tracking building performance. In many state and municipal government agencies, energy bills totally bypass the facility manager, going directly to accounts payable. Portfolio Manager provides a tool for the facility manager and the business office to assess building efficiency through a free, user friendly, online software. ENERGY STAR was developed as a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. This proven software was developed in 2000 by Oak Ridge National Laboratory and Lawrence Berkeley National Laboratory with the continued support of the DOE’s Energy Information Administration. Agencies using Portfolio Manager benchmarking are provided with the following services:

1. A basis for comparing all building within their portfolio on cost and BTU per square foot
2. A basis for comparing all building against national standards on cost and BTU per square foot
3. A basis to measure saving from the base case going forward in support of documenting project savings, and operational improvements.
4. A reporting system which supports efficiency program evaluation
5. A basis for determining, in real-time, if a project is saving at rates projected by the contractors
6. It qualifies successful projects for national Energy Star recognition

EPA is currently in partnership with several other states through a pilot program to deliver greater energy savings in commercial buildings. Building Performance Assessment using Portfolio Manager is assisting utilities and state energy efficiency programs in achieving increased savings by strategically pursuing whole-building energy improvements with their business customers. Over 260,000 buildings, representing more than 28 billion square feet of space and more than 40 percent of the total market, have been assessed for energy efficiency using Portfolio Manager, EPA’s ENERGY STAR measurement and tracking tool. More than 7,500 buildings earned the ENERGY STAR in 2011 for a cumulative total of nearly 16,500 buildings, representing in excess of 2.5 billion square feet of U.S. building space.

**FIGURE 12. Cumulative Square Feet Benchmarked in Portfolio Manager**



*Note: Only buildings that can receive a 1-100 energy performance score are included in the data from 2001 to 2008. Beginning in 2009, buildings for which there is not yet a 1-100 score available were included in the count of total buildings benchmarked.*

Eastern Connecticut State University’s students, working as energy interns at ISE, have benchmarked over 600 buildings in the public sector using Portfolio Manager over the past few years. ISE’s operation could be expanded to support setting up and maintaining benchmarking portfolio accounts for the entire public sector including: state agencies, colleges and universities, municipal buildings and K12 schools. In addition, the staff at ISE could use its experience in Portfolio Manager and workforce training to provide instruction in Portfolio Manager to benchmarking users in the public and private sectors.

*Section 13 reinforces the provisions of section (a) for utilities to make available records of energy consumption data (1) compatible for upload to Energy Star Portfolio Manager ...for 36 months (b) upon written authorization ....shall upload all consumption data to Energy Star Portfolio Manager*

It is our experience that the most difficult task in processing Energy Star Portfolio Manager for agencies and municipalities has been the collection and manual input of monthly energy bills over multiple years for multiple buildings. Often the facility managers at the agencies themselves do not know how many separate electric and natural gas accounts they pay each month for large buildings and multi-building campuses. In order to complete the volume of building benchmarking recommended in the CEP, it is essential that energy customers have access to electronic copies of their energy use for multiple years. In addition, EPA has developed a protocol for electronic transfer of this billing data directly from the utility into Portfolio Manager. This will be important for both the initial set-up of the accounts in Portfolio Manager and for its ongoing maintenance. In addition, a clear process for allowing the customer to dispense their information to an authorized agent, such as EPA, would also expedite the benchmarking and building performance assessment. In order for Portfolio Manager to be used to maximum effect with regards to building operations and energy efficiency, it is important for customers to be provided with electronic energy data in a timely manner. In this way, building performance can be assessed on a monthly basis and the effect of any changes in building operations assessed in the next billing cycle in order to optimize efficiency.

*Section 14 (a) “DEEP will Benchmark all nonresidential buildings owned and operated by the state or any state agency...”*

As an Energy Star Partner, ISE has already benchmarked the 12 Connecticut Community Colleges and individual buildings in the CSU system for the Board of Regents, as well as all of the projects (44 facilities) receiving funding under DEEP’s Lead-by-Example program. ISE has offered benchmarking to the 169 school systems in Connecticut and has completed benchmarking on 400 of the 1050 buildings. In addition, ISE has completed benchmarking on approximately 100 municipal buildings and over 150 state facilities. The benchmarking operation at ISE could be expanded to create a Portfolio Manager benchmarking hub or call center, providing training and processing support for all of the state and municipal facilities.

*Section 16 “...any application for a building permit for new construction 10,000 square foot or more or improvements costing at least 25% of assessed value shall include an estimate of the finished buildings performance using US EPA Target Finder and subsequent to construction be benchmarked using US EPA Portfolio Manager.*

The state building code requires the use of ComCheck to determine if a proposed commercial building will comply with the current building code. This free software, available from the US Department of Energy at <http://www.energycodes.gov/comcheck> can be used to determine if the design meets the code and, following construction, if the building “as built” also meets the requirements of the code. Of course the code, although updated in recent years, is still evaluating if the building will meet the minimum requirements for occupancy.

For above code building designs, **Target Finder** can determine if a design or a building “as built” is an Energy Star Building. Energy Star buildings are in the top 25<sup>th</sup> percentile for energy efficiency when compared to other similar buildings. Target Finder software does not estimate energy bills, but requires the architect to perform a simulation to determine the energy use for the design and enter that amount into Target Finder along with demographics on the building to determine if the building will qualify for Energy Star recognition. Currently, the High Performance Schools Regulation Taskforce is considering a recommendation to modify the state regulations for the new construction and renovation of schools to utilize Target Finder and establish a score of 75 or higher as the standard for all new school requesting state construction funding. This will secure that all new school building will meet the Energy Star requirements, including being in the top 25<sup>th</sup> percentile in energy efficiency compared to schools nationally.

**In addition, I would like to briefly comment on the following:**

*Section 6 Section 16-19 ff (3) “Permit commercial, industrial and multifamily buildings with Class 1 renewable generation or CHP to sub-meter...”*

ISE agrees that tenants residing in buildings with large-scale Class 1 renewable energy systems or Combined Heat and Power (CHP) systems should have the option to purchase energy from the on-site renewable energy source or CHP. For a developer to offer this option, the renewable energy system or CHP unit must have capacity significant larger than the needs of the landlord’s space and the common areas of the building.

*Section 1 “...supports the decoupling of both Electric and Natural Gas Distribution revenue from a volume formula ...”*

ISE supports decoupling because it encourages aggressive energy efficiency, load management and conservation without causing financial hardship to the distribution utilities.

*Section 2 “...supports a combined Energy Efficiency Fund and programs that also address fuel oil. Improved integrated approach to whole building solutions that can go deeper and wider toward making buildings more efficient...”*

ISE supports a combined and coordinated Energy Efficiency Fund and supporting programs that provide comparable services to customers that use electricity, natural gas, fuel oil and propane. The programs should be available to all residential, commercial, industrial and public sector energy users.

*Section 8 Support Micro Grids*

ISE supports the installation of Micro Grid technology because of the improvements they provide to communities and large businesses in delivering services during power outage situations. They typically have higher operating efficiency and lower emissions than central power plants, and can deliver power and heat at lower costs than traditional central power plants if installed as CHP units.

*Misc:*

Geographic Information Systems (GIS) technology has seen significant advancements in recent years, both in capability and expanding usefulness across multiple areas. Our understanding of this technology is that the mapping multiple layers of resources could prove to be a valuable tool for identifying opportunities that could support sustainable neighborhood development around the state's transportation hubs. This technology can involve GIS mapping of proposed community expansions over land resources, utility infrastructure, and zoning demographics, which could encourage "Smart Growth", a goal of the State's Plan for Conservation and Development. Its use may help us to avoid downstream problems with traffic congestion, environmental pollution and adverse impacts on the state's resources. This technology could also simulate conditions, including the impact of 100 year storms and flooding caused by extreme rainwater run-off.

Thank you for this opportunity to support this important legislation. I encourage you to act on this bill. I regret not being available to attend this hearing, however; feel free to contact me if you have any questions.

Respectfully Submitted;

A handwritten signature in black ink, appearing to read "William M. Leahy". The signature is written in a cursive style with a horizontal line underneath.

William M. Leahy  
Director  
Institute for Sustainable Energy  
Eastern Connecticut State University  
83 Windham Street  
Willimantic, CT 06226  
(860) 465 – 0252

## Background

**The Institute for Sustainable Energy at Eastern Connecticut State University** was established in 2001 to provide an unbiased view of energy resources and practical solutions to improving the state's energy profile and to promote a more sustainable energy future for Connecticut. The Institute's focuses on matters related to the formation of public policy, providing educational outreach, supporting energy solutions and maintaining information resources on energy and sustainability. The Institute provides benchmarking and energy planning services, relative to energy efficiency and use of renewable energy sources and the application of high performance building standards, to Connecticut's municipal governments, school systems and state agencies.

**William M. Leahy** is the Chief Operating Officer of the Institute for Sustainable Energy at Eastern Connecticut State University (ECSU). He holds a BS and MS in Industrial Education from Central Connecticut State University and a MS in Business Management from Rensselaer. He earned a Certified Energy Manager (CEM), Certified Energy Auditor (CEA) and Certified Sustainable Development Manager (CSDM) from the Association of Energy Engineers and is a LEED Accredited Profession from the US Green Building Council, and Green Professional (GPRO) from Urban Green in New York. Leahy has 33 years of experience in energy efficiency and load management.

In 2002, Leahy was appointed Director at the Institute for Sustainable Energy at Eastern Connecticut State University. Institute has been the recipient of numerous national and regional awards including the 2004 National Energy Star Partnership Award for Community Leadership in Energy Education from the US Department of Energy and Environmental Protection Agency.